

## **REMARKS**

### **Status of the Claims**

Claims 1-32 are pending in this application.

Claims 1, 3-7, 15, 17-21, 29 and 31 are rejected.

Claims 2, 8, 9, 10-14, 16, 22, 23-28, 30, and 32 have been previously withdrawn.

### **Rejection of Claims 1, 3-5, 6, 7, 15, 17-19, 20, 21, 29, and 31 Under 35 U.S.C. § 103**

The Office action rejects Claims 1, 3-5, 6, 7, 15, 17-19, 20, 21, 29, and 31 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,951,381 to Videcoq et al (hereinafter "Videcoq") in view of U.S. Patent 5,846,125 to Robichon (hereinafter "Robichon"). The rejection is respectfully traversed.

Independent Claims 1, 15, 29 and 31 specify, *inter alia*, a rotary edging wheel comprising a hub portion operable for attachment to a rotary power source and an outer circumferential rough cutting surface having a width, said surface including an abrasive grit attached thereto, wherein said abrasive grit is present at a substantially level depth across the width of said surface.

Videcoq teaches that a "grinding wheel 1 is illustrated in FIGS. 1 and 2 consists of body or core 2 and of an abrasive layer 3." See *col. 1, lines 66-67*. Videcoq also teaches that the "abrasive layer 3 is subdivided over the length L into three portions: in the middle, a portion having a relatively high constant thickness  $e_1 + e_2$  and, on either side of portion 8, two portions 9, 10 having a thickness which decreases progressively from  $e_1 + e_2$  to  $e_1$ ." See *col. 2, lines 9-13*. Thus, Videcoq teaches that the surface has a varying thickness to compensate for wear of the abrasive layer.

Robichon teaches that “it should be noted that the abrasive 10 can have external grooves 11 positioned opposite to the distribution holes 3. This allows the cooling fluid to be able to come out of the grinding wheel, the abrasive 10 not being porous.” See *col. 3, lines 24-28*. Robichon also teaches that “the external grooves are inclined with respect to the axis of rotation A of the grinding wheel. This allows better distribution of the cooling fluid over the whole width of the grinding wheel.” See *col. 3, lines 36-39*.

Applicant agrees with the Office action that Videcoq does not teach or suggest the abrasive grit is present at a substantially level depth, at least one pair of grooves formed in the surface comprising a first groove extending at an angle across the surface, a second groove extending at an angle across the surface, wherein the first and second grooves are angled either towards each other or away from each other and extend continuously across the surface.

To overcome these shortcomings in Videcoq, the Office action asserts that it would have been obvious to combine Videcoq and Robichon to meet the claimed invention. Applicant disagrees with this assertion because the Office action fails to establish a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.<sup>i</sup> Second, there must be a reasonable expectation of success.<sup>ii</sup> Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.<sup>iii</sup>

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<sup>i</sup> *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

<sup>ii</sup> *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

<sup>iii</sup> *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

The initial burden is on the Examiner to provide some suggestion of the desirability of doing what the applicant has done.<sup>iv</sup> To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.<sup>v</sup>

Applicant asserts that the Office action fails to establish a *prima facie* case of obviousness because there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

Videcoq teaches that the layer 3 has a varying thickness to compensate for wear of the abrasive layer. Specifically, Videcoq teaches that the central portion 8 has a greater thickness than the two portions 9, 10 because the central portion 8 undergoes the most wear. As stated in Videcoq:

“This results, at the expense of a slight increase in the volume of abrasive material and therefore of moderate cost, in a substantial lengthening of the life of the grinding wheel which, for the whole of this life, preserves a peripheral surface, the shape of which is close to that of a cylinder.

In fact, the shape of the extra thickness of the layer 3, as compared with the conventional cylindrical shape of a constant thickness  $e_1$ , is approximately symmetrical with respect to a curve C which corresponds to the shape which the layer 3 would assume, after wear, in the absence of the extra thickness.” Col. 3, lines 1–11.

A prior art reference may be considered to teach away when “a person of ordinary skill, upon reading the reference, would be discouraged from following the path

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<sup>iv</sup> *Ex parte Levengood*, 28 USPQ 2d 1300, 1301–02 (B.P.A.I. 1993).

<sup>v</sup> *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant."<sup>vi</sup>

Here, Videcoq explicitly discourages one of ordinary skill in the art to modify the abrasive layer 3 with an abrasive grit that is present at a substantially level depth across the width of said surface, as recited in the claimed invention. Assuming *arguendo* that Robichon teaches an abrasive grit that has a substantially level depth across the width of the surface, by Videcoq teaching away from such a modification, one skilled in the art would not be motivated to modify Videcoq with the abrasive grit of Robichon to meet the claimed invention.

The Examiner asserts that the suggestion or motivation to combine the reference is found in the knowledge generally available to one of ordinary skill in the art. See *Paragraph 4*. Specifically, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the grinding wheel of Videcoq with the grooves of Robichon in order to take away heat produced in the grinding work and carry away the cutting produced far from the work area. See *Paragraph 2*. Applicant respectfully disagrees.

First, Robichon teaches that the external grooves 11 are used for the distribution of coolant. See *col. 3, lines 24-44*. However, the claimed invention does not require coolant, and therefore, one skilled in the art would not be motivated to modify the grinding wheel of Vidocoq with the grooves of Robichon to provide coolant for the grinding wheel.

Second, there is no mention in Robichon of providing grooves to carry away the cutting produced far from the work area. This suggestion was impermissibly gleaned from Applicant's disclosure. The suggestion to make the claimed combination and the

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<sup>vi</sup> *In re Gurley*, 27 F.3d 551, 553, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994).

reasonable expectation of success must be founded in the prior art and not in Applicant's disclosure.<sup>vii</sup>

The Examiner also asserts that Videcoq provides a trade between the cost and service life of the grinding wheel and does not teach away from the present invention. Again, Applicant respectfully disagrees.

Vidocoq does not teach providing a trade between cost and service life. There is no mention in Vidocoq of providing a uniform depth across the width of the surface of the grinding wheel, and in the alternative, a non-uniform depth. Vidocoq only teaches a non-uniform depth across the width of the surface to extend the service life of the grinding wheel despite an increase in overall cost of the grinding wheel.

In view of the foregoing, it is respectfully submitted that the Office action fails to establish a *prima facie* case of obviousness. For at least this reason, Claims 1, 15, 29 and 31 are allowable over the applied art, taken singly or in combination. Claims 3-5, 6 and 7, which depend from Claim 1, and Claims 17-19, 20 and 21, which depend from Claim 15, are likewise allowable over the applied art, taken singly or in combination. Withdrawal of the rejection is respectfully requested.

In addition, the Office action asserts that it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the claimed features mentioned above because discovering the optimum or workable ranges involves only routine skill in the art. The Office action cites *In re Aller* 105 USPQ 233, 235 (CCPA 1955). Applicant respectfully disagrees with this assertion.

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<sup>vii</sup> *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894, 7 USPQ2d 1673 (Fed. Cir. 1988).

It is respectfully submitted that *In re Aller* does not apply to the claimed invention for several reasons. First, the application in *Aller* was for a process for the production of phenol (carbolic acid), not an article of manufacture as in the instant application.

Second, the process claimed by the Applicant in *Aller* was identical with that of the prior art, except that the Applicant's claims specified a lower temperature range (40-80 degrees) and a higher range (25-70 percent) of sulphuric acid concentration. In *Aller*, the Court held that the claimed process is merely different in degree and not in kind from the reference process, and that the criticality of the claimed ranges has not been shown. *Ibid* at 237. Here, there is no mention in Robichon of the specific angle of each groove, only that the grooves are inclined alternatively to provide better uniform distribution of the coolant. *See col. 3, lines 36-41*.

Third, the Court in *Aller* held that a change in temperature or in concentration, or both, may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art. *Ibid* at 235. In the instant application, the angle of the grooves provides new and unexpected results of improved swarf removal that is different in kind from the results of the prior art.

In view of the foregoing, Applicant asserts that *Aller* does not apply in the instant application.

For at least this additional reason, Claims 3-5 and 17-19 are allowable over the applied art. Withdrawal of the rejection is respectfully requested.

## CONCLUSION

In view of the foregoing, Applicant respectfully submits that the application is in condition for allowance. Favorable consideration and prompt allowance of the application is earnestly solicited.

Should Examiner Nguyen believe anything further would be desirable in order to place the application in better condition for allowance; the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

It is believed that any additional fees due with respect to this paper have already been identified. However, if any additional fees are required in connection with the filing of this paper, permission is given to charge account number 50-1620 in the name of Warn, Hoffmann, Miller & LaLone, P.C.

Respectfully submitted,

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